South Florida Water Management District

M E M O R A N D U M

DATE: August 4, 1999

TO: Audit Committee, SFWMD Governing Board

FROM: Allen Vann, Inspector General

SUBJECT: District Implements the District's Year 2000 Compliance Planning Audit Report Recommendations, Report #99-19
Conclusion: District Substantively Year 2000 Ready

The Office of Inspector General's Information Systems Audit Manager performed this follow-up of the District's Year 2000 Compliance Planning in order to update the status of the audit recommendations.

Background

In August of 1997 the Board was presented with the Audit Report of the District's Year 2000 Compliance Planning (#97-13). In addition to our general findings mentioned below, a total of twenty-one specific recommendations were contained in the report. The review of the status of the recommendations formed the basis for this report.

In general, we found that District staff was aware of the potential technical problems associated with the transition to the next century, responsibilities had been assigned to staff members, and some budget estimates had been developed to address problem resolution. Plans for year 2000 compliance for the major financial and human resource systems were being implemented. Plans for the major database systems were being developed. However, other District computer programs, databases, shared data, and equipment needed to be inventoried and assessed. The District needed to obtain positive assurance from its vendors that their products would be year 2000 compliant and contracts/purchase orders needed to contain year 2000 compliance language.

Summary

In reviewing the work of the District's year 2000 cross-departmental team, we found that they successfully implemented the recommendations contained in our audit report. Executive support, strong leadership, and teamwork contributed to successfully addressing each recommendation and additional activities to best address issues that developed as part of the effort. As a result, the District is substantively year 2000 ready.

Information Technology staff, based upon a recommendation from the Office of Counsel, has determined that it would be prudent to hire an outside consultant to further review District activities toward year 2000 compliance and to look for any vulnerability not yet taken into consideration.

Objective/Scope/Methodology

The objective of our follow-up is to ensure that adequate, effective, and timely action toward the implementation of the year 2000 compliance recommendations has been taken.

This report is limited to validating the current status of the twenty-one recommendations found in the "Audit of the District's Year 2000 Compliance Planning - Final Report" dated August 19, 1997.

In conducting the follow-up, the following steps were taken:

1. Review the "Audit of the District's Year 2000 Compliance Planning",
2. Review the confirmation report matrix on the current status of the Recommendations, and
3. Obtain supporting documentation to verify the current status of the twenty-one recommendations as reported.

Findings

Recommendation #1 **– Ross Payroll/Human Resource Information System**

(1) Develop specific plans for any changes to the interface with both Barnett Bank (NationsBank) for electronic deposit of paychecks and with Southeastern Resources for transfer of time sheet information for leased employees.

Status: *Partially Implemented*

Changes from the 6-character short date format have not been made to the payroll electronic payroll transfer records. The staff is waiting for the Federal Government to set a date for the change to the record format. The staff will then upgrade and test the District's Ross payroll system for electronic transfer of payroll to NationsBank (Barnett). However, since the Federal Government has not yet advised the District on the planned date for the "record format" change, no implementation date has been established.

The interface with Southeastern Resources utilizes the year 2000 compliant 8-character full date format for transmitted time sheet records.

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Recommendation #2 **– AMS Local Government Financial System**

(2) In keeping with year 2000 practices for financial systems, the staff should follow their plan of completing the installation and testing of the year 2000 compliant version of AMS by December 31, 1998.

Status: *Implemented*

The staff has installed and tested the year 2000 compliant version of the District's AMS Local Government Financial System software. AMS passed the year 2000 tests.

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Recommendation # *3*, 4, 5, 6 **– District Developed Oracle Database**

(3) Review and document databases not considered part of the District's production database inventory for inclusion in the compliance plans as part of the overall inventory of District Oracle software applications.

Status: *Implemented*

Individual Department/Office plans include an inventory of computer application programs including Oracle databases.

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(4) In addition to budget estimates developed for the Hydrologic and the Permits Database, include the cost for all Oracle databases in a formal District-wide year 2000 database compliance plan.

Status: *Implemented*

Work order contractor (C-9933, W.O. #1) was used in the project to upgrade the Oracle applications running on the DEC computers (including the Hydrologic database) at a cost of $66,540.00. Also, a contractor was hired on a work order (C-9922, W.O. #2) basis to convert the Permits (Regulatory) Oracle database to the year 2000 compliant version at a cost of $11,357.50.

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(5) As part of the year 2000 project plan, bring the appropriate District Oracle products up to the current software release levels. Convert and test Oracle database applications to run at current compliant software release levels.

Status: *Implemented*

Response to this recommendation is included in Recommendation (4) and in specific Department/Office plans in Recommendation (3)
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(6) Test applications that were developed with year 2000 compliance already included in the specifications, such as CMMS and budget, but have not been actually tested with FY 1999/2000 data and dates.

Status: *Implemented*

The District's Computerized Maintenance Management System (CMMS) passes the test for year 2000 compliance. The budget system was included in the Oracle applications in Recommendation (5).

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Recommendation # 7,8 – **In-House Developed Computer Applications**

(7) Review all District provided compilers and developmental utility programs for year 2000 compliance issues. If necessary, to resolve potential problems, bring compilers and utility software up to current release levels. Consider alternative products where the commercial provider does not provide a year 2000 compliant product.

Status: *Implemented*

A list of all current District computer product vendors was developed and each product was tested for year 2000 compliance. Utility programs and compilers were included in the list. Products no longer used, obsolete, or replaced were put on a separate list and not tested.

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(8) Solicit from District computer users a complete list of in-house applications utilized in their normal course of work activities. From this user generated list develop an in-house application program inventory. Review each application to see if it is year 2000 sensitive (i.e. utilizes date fields and/or date calculations). Convert and test in-house developed applications.

Status: *Implemented*

A District-wide computer application program inventory list was developed. The District computer users included conversions and testing of their application programs as part of their departmental/division year 2000 plans.

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Recommendation # 9,10, 11, 12- **Data Sets Used By the District or Provided to Others**

(9) The year 2000 plan needs to insure that the form of the date data in the Oracle database migration of the various applications includes processes that when applied to historic data utilizes the four digit year for data storage, processing, and reporting.

Status: *Implemented*

On September 4, 1997 a presentation was made to District Oracle developers on the status of Oracle products, product upgrade plans, and standards for making Oracle databases year 2000 compliant. A standard to upgrade computer display screens (forms) and report fields to a 4-character year length was presented.

Historical data conversion process was defined. The process presented was to export the data, change year date field definition from the old 2-character (YY) to the new 4-character (YYYY) standard format, concatenate '19' on the year, and import the data back into the database.

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(10) The data backup and recovery systems utilized for on-line data sets, including the Oracle databases, Ross/AMS data, and other data located on file servers, must be considered a high priority issue in the year 2000 compliance planning. Each backup and recovery system should be tested for compliance.

Status: *Implemented*

The backup software utility programs SLS and Networker have been successfully tested for year 2000 compliance. These systems are used to backup and/or recover computer "programs and data" on the District's major hardware systems including the DEC minicomputers, Unix based workstations and NT servers.

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(11) In order to avoid the additional cost of maintaining two production versions of the Ross and AMS Systems, both historic human resources and financial data should be converted to the "new" year 2000 compliant format. Since the District often needs to make comparison runs of data from different fiscal years, this would allow the processing of both current and/or historic data with a single version of either system.

Status: *Implemented*

The Ross system for Human Resources/Payroll has always used an 8-character date field for computer data files. The AMS financial system date fields have been converted from 6-character to the full 8-character date format for processing of historical data.

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(12) Since computer data is provided to "others" (outside of the District), steps should be taken to inventory our regular customers, notify them of any new data formats, and provide a planned date for any changes.

Status: *Implemented*

Each Department/Office developed a shared data inventory list. A standard "form" letter advising our "partners" that we were converting to a full 4-character year field by expanding our data record length for this purpose was sent to each organization on the list. Additionally, the District requested that "partners" advise us of any proposed changes they would be making toward year 2000 compliance.

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Recommendation # 13 - **Data Sets Provided to the District by Others**

(13) Complete an inventory of data that is routinely delivered to the District through a computer link, CD ROM (compact disk read only memory), or magnetic media (tape or disk) for processing on District computers and determine if the data is year 2000 sensitive. Utilizing the resulting list of data providers with year 2000 sensitive data, contact each to determine their plans for any changes in the data format, their target date for these changes, and include any corresponding changes as tasks in the District's year 2000 project plan.

Status: *Implemented*

Response to this recommendation is included in Recommendation (12).

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Recommendation # 14,15 – **District's Plan and Budget**

(14) All funding that is required to update District technology that is directly related to solving a "year 2000 problem" should be budgeted under the same code, Lk08.

Status: *Implemented*

Budget reports for Fiscal Year 1998 and Fiscal Year 1999 contain a program activity Lk08 as "Year 2000 Compliance."

Budget & Actual Expenditures for LK08 by FY						
	FY 98		**FY 99**		**TOTAL**	
	Budget	**Actual**	**Budget**	**Actual ***	**Budget**	**Actual**
Salary&Benefits	189,469	478,893	244,273	137,102	433,742	615,995
Services	396,924	248,887	120,656	93,158	517,580	342,045
Other	30,840	32,568	95,236	48,377	126,076	80,945
Total	$617,233	$760,348	$460,165	$278,637	$1,077,398	$1,038,985

* through July 31, 1999

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(15) The District should immediately develop a year 2000 project plan. The infrastructure for supporting the plan should include: upper level manager(s) sponsorship, a project manager, a support team of Information Systems

professionals from across the District, and quarterly status reporting to the District's Executive Management Group.

Status: *Implemented*

The District established a year 2000 project team with executive support, project management and coordination in the Information Technology Department, and Departmental team leaders form across the District. The team held a project "kick-off" meeting in September 1997. Presentations were made on the status of the project to both the District's Executive Council and the Governing Board. The project held regular meeting and kept minutes of their activities and action items.

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Recommendation # 16, 17 – **Vendor Software Certified, Tested, and Standards Established**

(16) For existing District purchased computer hardware and software, request written vendor certification that each product is year 2000 compliant and perform on-site tests to validate the vendor's compliance claims.

Status: *Implemented*

 A vendor lists of over 500 vendors was developed and vendors were contacted. Each vendor was contacted as many as three times to ascertain the year 2000 compliant status of their product. After three contacts without a response the product was classified as non-compliant.   However, staff tested each product as part of recommendation (7) to validate vendor claims or determine if a product was compliant.

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(17) For new procurement, District staff should immediately begin to include year 2000 language in contract documents for software development and in purchase order specifications for hardware and software purchase requests. Additionally, new or renewal of service/maintenance contracts for computer controlled devices should include language that would require the service provider to certify year 2000 compliance or provide a compliant solution

Status: *Implemented*

Year 2000 compliant language was added to the District's terms and conditions for contracts and purchase orders. This change was effective in September of 1997 and impacts new or renewed contracts.

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Recommendation # 18 – **Sufficiency of Skills and Use of Outside Resources**

(18) "Contracted or leased" information systems professionals whose responsibilities and tasks would be directed and supported by the individual team members should supplement the District year 2000 project team.

Status: *Implemented*

The District utilized the work order contract process to add expertise of external information system professional in supplementing the staff in the conversion and testing of computer databases, software, and hardware for year 2000 compliance.

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Recommendation # 19, 20, 21- **Planning for Computer Devices & Data Collection Equipment**

(19) All District computer controlled devices, beyond what is normally considered "computer hardware and software," must be included in the overall "inventory assessment phase" of the District's year 2000 plan.

Status: *Implemented*

Computer controlled devices such as building environmental controls, security systems, fire alarms, elevators, etc. were included in the departmental plans as part of Recommendation (3). Upgrades and changes to these systems were made as necessary.

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(20) Include the year 2000 compliance contract/warranty language in any purchase order or request for proposals for upgrade or replacement of the Audix or telephone system(s).

Status: *Implemented*

Year 2000 contract/warranty language was included in the contract with BellSouth Communications Systems (contract number C-8358) for the new telephone/voice mail system.

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(21) The computers and operating system used for data collection and operational control of the telemetry system should be vendor certified and tested for year 2000 compliance.

Status: *Implemented*

The data collection and telemetry control system was upgraded, tested, and passed the year 2000 tests.

Conclusion

The District staff has made every effort toward bringing the technical resources of this organization into compliance with the requirements of making a smooth transition into the year 2000.

However, this audit was limited to computer and other related technical resources and does not include all the potential risks associated with the impact of the worldwide transition to the year 2000. Since date dependent technology is embedded into almost every aspect of business operations, there is **no guarantee** that District operations will not be impacted. Furthermore, vendors and other service providers who have not adequately planned for the year 2000 transition can impact the District's operations.

There are **two additional actions** the District is taking to minimize the potential for millennium problems. **First**, with respect to Senate Bill 80 (Commerce Protection Act), the District plans to hire a consultant to review the adequacy of year 2000 activities. **Secondly**, under the direction of the District's Emergency Manager, each Department/Office is developing year 2000 contingency plans. These plans will be available for use during the planned activation of the Emergency Operations Center from December 31, 1999 to January 3, 2000.

c: Frank Finch
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